Molding examples

- Molding conditions:
  - Injection machine: Clamping pressure 400kN (400tf)
  - In-line screw type thermoplastic injection machine
  - Mold base: 4 small mold articles per injection, mold articles size 10 X 4 X 1.5
  - Runner size and adjustable for 4 levels.
  - Comparison: Conventional sprue bushing and ecology sprue bushing
  - Judgment standard for the test result evaluation

- Specific grade:
  - Standard grade
  - Reinforced resin (non-filler)
  - Specific gravity: 1.04

Example (Estimate) Case of injecting 100,000 mold articles with ABS resin material by mold base of 4 articles per injection and 25,000 shots

<table>
<thead>
<tr>
<th>Conventional Sprue Bushings</th>
<th>Ecology Sprue Bushings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight of waste resin at sprue runner part</td>
<td>59.5kg</td>
</tr>
<tr>
<td>Weight / per one mold article</td>
<td>0.094</td>
</tr>
<tr>
<td>Required molding processing time (based on 8 hours per day)</td>
<td>14.7 days</td>
</tr>
</tbody>
</table>

By changing conventional sprue bushing to Ecology Sprue Bushing, 40 kgs were cut down in waste resin and enabled to shorten the molding processing time to 3.2 days (25.6 hours) as well. Reducing weight of waste resin and energy saving (cut down electricity expense) leads to CO2 reduction.

Selection of resin pocket depth F

Finished mold article condition in Ecology Sprue Bushing is depending on the size of resin pocket depth F. Refering to the chart below mentioned on the relationship with mold resin and resin pocket depth F sizes available for mold processing, select the suitable resin pocket depth F.

- In case shallow resin pocket depth F (F = 0.3)
- In case deeper resin pocket depth F (F = 1.2)

Stringing is occurred as the sprue does not cut at the resin pocket and pulls out the resin from the nozzle tip. Mold release trouble is occurred as the resin in sprue pocket becomes solidified and united with sprue.

Relationship with mold resin and resin pocket depth F sizes available for mold processing.

- Select the suitable resin pocket depth F from the above chart.
- Stable mold processing may not be done when the resin pocket depth F deeper due to rapid cooling and solidification at the bottom part of the resin pocket. Therefore, shallower depth is recomendable.
- This testing is an example and considers this chart as reference purpose for selecting suitable resin pocket depth F.
- Make the possibilities of stringing or mold release trouble depending on the using resin grade, mold machine type and mold conditions.